Information communication and technology equipment in schools

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Making business sense
of climate change

Environmental issues are becoming an increasingly important part of the curriculum. Incorporating some of the advice contained in this fact sheet when buying and using Information communication and technology (ICT) equipment, could reinforce the message that our planet's resources are finite and should be used responsibly.

ICT is now a key area of the curriculum in primary and secondary schools. Most schools have a dedicated ICT suite with computers and printers. The school office will also have a printer, fax machine, photocopier and computer(s) for administration. Increasingly, classrooms are also equipped with computers, either to support other areas of the curriculum or to deliver lessons through interactive white boards.

This rapid growth in ICT use has increased schools' energy bills; ICT related electricity use in schools has doubled over the last 5 years.

After lighting, ICT is the largest single user of electricity in a school. Thus the potential for reducing energy use by ICT is significant.

Computers

Computers are not in use all of the time that they are switched on, and any 'idle time' is wasting energy. There are a number of ways to avoid this.

The following simple steps do not need to be implemented by an ICT expert, and most schools will have an ICT technician who could carry them out. Essentially, the measures outlined will not affect data files or unsaved work:

- **Activate the standby mode:** Most PCs purchased within the last 8 years have an in-built *standby* mode. When the PC is not in use but left on, after a pre-set time, the PC can power down to a low energy mode. The normal operating mode is restored as soon as the user touches the keyboard or moves the mouse. The standby mode is already activated for most new PCs, however, you may have to enable the standby mode in older PCs

- **Pre-set standby modes realistically:** You can pre-set the PC to go into standby mode after a fixed time period of not being used. If this period is too short, the standby mode will be perceived as a nuisance and may lead to staff or pupils de-activating it altogether. An interval of 10-15 minutes is usually appropriate

Electricity generation from fossil fuels produces carbon dioxide (CO_2) emissions and other greenhouse gases which contribute to climate change.

A typical PC and monitor continually left on could cost around £63 a year to run. Switching off out of hours and activating 'standby' when not in use could reduce this to £6.

And you'll save enough energy to make over 50,000 cups of coffee. That's 9 cups of coffee for 30 teachers every school day.

- **Switch off the monitor:** This will save over 60% of the energy used by a PC during break times and when the PC is not required for a particular lesson

- **Don't use screen savers:** Screen savers are not a low-power mode. If the screen saver is complex and colourful it may actually use more energy than operating in normal working conditions

On average, 9 out of 10 PCs do not have the standby mode enabled so it may be worth doing a spot check on your ICT suite!

- **Purchase energy efficient models when buying new PCs:**
  - When buying new equipment, look for models that have an Energy Star rating or equivalent. The Energy Star label indicates that the model has a low power mode, but some Energy Star rated models may consume less energy in standby mode than others
  - Don't buy multi media systems unless they are needed. PCs with sound cards, microphones and modems will increase energy use
  - Consider buying laptops and flat screen monitors which use less energy than a conventional PC and monitor
  - Liquid Crystal Displays (LCDs), including the new TFT screens, use less energy, save space and are more 'comfortable' to use as they flicker less and do not emit electromagnetic emissions.

When you consider just how many PCs your school has, the savings are even greater.

A school with 20 PCs could save over £1000 annually just by switching PCs off out of school hours. This doesn't include the extra savings from using the standby mode!

Printers

Dot matrix printers use the least energy whilst in operation; inkjet printers use slightly more energy. Laser jet printers are the most energy-intensive, however, they are likely to be more energy efficient for high-volume printing as they are faster than inkjet or dot matrix printers.

Like modern PCs, printers have in-built energy saving features which are easy to activate.

To avoid wasting energy through use of printers:

- Use any energy saving features that are built into the device

- Switch off printers at the end of lessons, at the end of the school day, over the weekends and during the holidays

> A laser printer left on all year could cost around £50 in electricity. Simply switching it off at night, weekends, and holidays can reduce this to £9 a year, and using standby features could save even more!

- Use low melting point toner where appropriate. Your supplier will be able to advise on whether this is suitable for your printer

- Don't routinely switch on printers at the start of each day — wait until they are needed

- Use economy or draft mode where available — this will save ink as well as energy

- Investigate whether printers have a double-sided (duplex) mode and activate this if available — preferably by setting double-sided printing as the default

- When buying new printers, first consider the possibility of sharing a networked printer amongst staff and pupils. If a new printer is needed, look for the Energy Star or other equivalent ratings.

Photocopiers and fax machines

Typically, a school will have a number of photocopiers that are switched on all day regardless of how often they are used. Use the checklist below to ensure that you are not wasting energy:

- Ensure standby modes are activated where they are a feature of the machine

- Consider switching off larger copiers. Use the smaller machines for routine printing and larger copiers for occasional high volume printing instead

- Remember that although copy printers are more economical than photocopiers, they are only practical for high volume copying

- Use low melting point toner where practical. Your supplier will be able to advise on whether this is suitable for your photocopier

- Issue magnetic access cards to staff to regulate and discourage excessive photocopying. Keeping an eye on the amount of uncollected photocopying will give an indication of how much unnecessary photocopies are being made

> A photocopier left on overnight uses enough energy to make 1,500 copies. Switching it off outside school hours saves the equivalent weight in CO_2 of 2 teachers in one school year alone

- Switch off machines out of school hours

- Run copies in batches to minimise the time the machine is operating in idle mode between full use and power down modes

- When copying more than one page, always use double-sided (duplex) mode if this is a feature of the copier

- When buying a new fax machine, choose one with a low standby energy rating. This is particularly important as fax machines usually need to be available for 24 hours a day, but may operate for less than 5% of this time.

Vending machines and water coolers

Your school might also make vending machines and water coolers available to staff and pupils. These tend to be left on out of school hours and energy can be saved by:

- Speaking to your supplier about turning water coolers and vending machines off at night and weekends. A simple 7 day timer can be fitted to automate switching off. Note that timers should not be fitted to refrigerated food vending machines

- Remembering that in some cases, the energy used to run these items continuously is more than the revenue the school may be getting from the supplier!

- Buying or renting more efficient hot drink vending machines. These hold water at 70ºC and only raise it to boiling point on demand. They also have smaller hot water storage tanks and lower lighting levels.

> Switching your school's vending machine off at night and at the weekends reduces energy costs by more than 70% and saves enough energy to print 7 million A4 pages! That saves enough CO_2 to fill almost 1 million milk bottles.

Key publications

GPG276: *Managing for a better environment — minimising
the running costs and impact of office equipment*

More Information

Information on power consumption for PCs and other
equipment is available from the UK Enviromental products
information consortium's website at www.ukepic.org

This factsheet is only a summary of principal measures.
More detailed information and other publications relating
to schools are available from the Carbon Trust Helpline,
0800 58 57 94, or on the website at
www.thecarbontrust.co.uk/energy